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ABSTRACT

This paper examines remedial programs in colleges and discusses the relationship of those programs to diagnostic testing. The Basic Skills Placement Test (BSPT) is required of all College freshman in New Jersey public colleges. Mercer County Community College, used as an example throughout this paper, uses the BSPT as a basis for placing students in appropriate remedial courses in writing, reading, and mathematics. The development of tests designed to measure the reading ability of college students and adults has not kept pace with the instructional programs. The few, widely used, standardized tests are discussed, especially the Nelson-Denny Reading Test (NDRT), designed for average college students. The NDRT is popular because of low cost and short administration time, but it has several shortcomings for remedial testing, including: (1) limited testing time; (2) no gradual increase in difficulty of items; (3) questionable results as a pre/post test measure; and (4) use of passage-dependent items. Ten desirable features in a diagnostic test for remedial college students are discussed at length. If a diagnostic test is well matched with the reading program, the information gained can assist instructional planning. (LMO)

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Instructional Implications of Diagnostic Testing

Perhaps the largest growth area for colleges over the last ten years has been remedial and developmental programs. There are many social and academic reasons for this phenomenon.

College Population

Today's college population is quite a different group from that of twenty-five years ago. In the past, "dropping out" of school to work was considered a reasonable alternative for academically deficient or unmotivated students. The current employment situation, however, is that a high school diploma is required for virtually any job. The controversial practice of social promotion is often blamed for deficiencies in basic skills among high school graduates. Open-admission policies are a source of encouragement for high school students who would not have been considered college-bound (by themselves or guidance counselors) twenty-five years ago. Finally, an economic situation with limited entry-level positions makes the alternative of continued schooling attractive.

Remedial/Developmental Programs

To meet the needs of freshmen who are not academically prepared to begin college-level courses, colleges have had to develop courses, programs and, in some cases, departments to teach basic skills. All 30 public colleges in New Jersey offer some type of remedial or developmental program.

In 1978, the Department of Higher Education began testing basic skills, which include Reading, Writing, Computation and Elementary Algebra. Aproximately 50,000 freshmen entering New Jersey's public colleges each year are tested. Test results of the Basic Skills Placement Test (NJBSPT) indicate that 31% of the students tested are deficient in verbal skills and 60% require remediation in Elementary Algebra. (N.J. Dept. of Higher Education, 1985)

Only one program will be described here as an example. Students entering Mercer County Community College, for example, are required to take the Basic Skills Placement Test, as are all college freshmen in the state. On the basis of the scores on this test, students are placed in appropriate English and Math courses. Remedial courses on two levels are offered in Reading, Writing and Math. Students may take one or both courses in each subject area depending on initial placement and assessment after completion of one course. Some students, of course, are not required to take any remedial courses.

The primary goal of the remedial program is to prepare students for college-level courses. Exit criteria are established to determine competence. In addition to specific topics and skills, instructors emphasize thinking and study techniques which often help students develop self-confidence. Although credits reflecting the number of hours of instruction are assigned, they can not be applied toward graduation. Students receive a grade of Pass or No Credit. Each course is taught in a combination lecture/laboratory format, providing instruction and practice. Rather than a formal lecture, instructors engage the students in activities, teach lessons, provide examples, and ask and answer questions. Specific assignments are completed in the laboratory and individualized supervision is provided.

To determine the effectiveness of remedial programs in the state, the N.J. Basic Skills Council followed the progress of remedial students over a period of four semesters. Their findings are encouraging. Predictably, skills-deficient students who complete the appropriate remedial courses have a greater chance of success than those who don't complete them. More impressive is the finding that subsequent academic performance for remediated students is acceptable when compared with non-remedial students. In addition, the retention rate for remediated students (75% at state colleges, 55% at county colleges) is higher than that of non-remedial students (70% and 52% respectively). (N.J. Dept. of Higher Education, 1985).

The Students

There is no typical remedial student, but there are some common characteristics. Some students never mastered basic skills for a variety of reasons (poor instruction, limited ability, social, emotional or physical problems, etc.) Others have been away from school for a while and have forgotten what they once learned. In the first case, the goal is initial learning and in the second, review. The ability of the students also covers a range from elementary to near college levels.

A student's attitude is often a reflection of his ability and background. Recent high school graduates whose deficiencies are minimal often resent spending a semester taking non-credit remedial courses. Older students who have chosen to return to school for a variety of reasons often find the remedial courses an extremely valuable transition back to school. Academically weak students often develop a positive or negative attitude on the

basis of their personal rapport with the instructors. Many of these students feel uncomfortable and threatened by any testing situation.

Testing Needs

Remedial programs generally serve a large number of students for a short period of time. For example, during an academic year at Mercer (Fall, Spring and Summer semesters), an average of 1300 students will take a remedial Reading course for eight, ten, or fifteen weeks. The average class size for these courses is 25 students. Under these circumstances, instructors must rely heavily on testing information.

As mentioned before, initial remedial placement is based on BSPT scores. Pre and post-testing is also conducted to measure individual student progress and for use in evaluating the program. The placement and pre-test data also provide information about the student's general ability in a particular subject. During the course of the semester, it is necessary to monitor progress and provide students with feedback. This may be accomplished by teacher-made tests, quizzes, a mid-term, homework assignments, etc.

Existing Tests & Practices

Ideally, teachers would be provided with diagnostic information about each student at the beginning of the semester. This would enable the instructor to develop an appropriate instructional plan immediately. Placement tests and pre-tests are designed to be used with a wide range of students and usually provide information about students in general terms (e.g. vocabulary or comprehension levels). Those which do claim to diagnose students' strengths and weaknesses often base such information on a very small number of test items.

In New Jersey, the BSPT is used to determine which students need remediation. As is the case with all placement tests, its primary function is identification. Instructors may find it helpful to rank their students on the basis of their placement scores, but that is basically the extent of the useful information.

Standardized reading tests are usually administered in a timed situation with separate test booklets and answer sheets. The vocabulary sub-test typically presents words in isolation followed by several choices from which to select a synonym. The comprehension sections ordinarily consist of reading passages followed by multiple choice questions.

When testing instruments were developed in the early 1900's there were three major comprehension test formats: reproducing a passage, solving written puzzles, and answering questions. In the first situation, the student was asked to read a passage and then write about what he had read. Scoring was based on the number of relevant vocabulary terms and/or ideas included. Although variations of this technique are sometimes used by instructors, it is not found in standardized tests today. An informal reading inventory is perhaps the descendant of this testing technique in that students are asked to recall and describe what they have read.

The second format, solving written puzzles, emphasized reasoning skills. Students were typically presented with a cloze passage and asked to supply or select appropriate words for the deletions. They were also given word problems, similar to those found on some math tests, today. Or they were given tasks to perform which required reading and following written directions.

By the 1930's the format which required students to read passages and answer questions was clearly the most popular. This method was considered convenient, economical, and objective. When computerized test scoring arrived in the '60's, the multiple-choice question test was a natural (Readence and Moore, 1983).

Testing College Students and Adults

The development of tests designed to measure the reading ability of college students and adults has not kept pace with the instructional programs. Few standardized group tests have widespread use (Cranney, 1983) and their value in assessing a remedial population is questionable.

Instructors of remedial college students have generally used tests designed for average college students (e.g. Nelson-Denny Reading Test, Scholastic Aptitude Test-Verbal) or those intended for younger students (e.g. Comprehensive Test of Basic Skills, California Achievement Test). In the first case, passages and questions were often too difficult for the students, sometimes resulting in scores which were so low that they were meaningless. The topics of the reading selections are frequently irrelevant to the students, and their lack of background is often a handicap.

When remedial college students take tests intended for younger students, the difficulty level is appropriate, but the format and topics often are not. Many older students find it insulting when they are asked to take such a

test. The scores, too, may be artifically inflated for the students at the upper end of the remedial range.

A brief look at the Nelson-Denny Reading Test (NDRT) will illustrate some of the assessment difficulties. This test seems to have widespread use in college situations and has been regularly reviewed (Cranney, 1983; Webb, 1983; Erwin, 1981; Stetson, 1982). Testing time is limited and there is not a gradual increase in the difficulty of the items, two conditions which often cause remedial students to either give up or mark any answer. It has lower reliability and validity data than the Iowa Silent Reading Test or the Stanford, yet is quite popular, perhaps due to its low cost and short administration time (Webb, 1983).

As a predictor of academic success, the NDRT was found to be comparable to the Scholastic Aptitude Test-Verbal and inferior to high school rank (Erwin, 1981). When combined with a measure of self-concept, the NDRT provided a higher degree of association with a student's grade point average than did either measure alone (Lehn, Vladovic, and Michael, 1980).

As a pre/post-test measure, the NDRT yields questionable results because of the timing factor. In one study, when the pre and post-test results were adjusted to equate the number of items completed, the gains were attributable to the number of items attempted (Stetson, 1982).

Finally, the issue of passage-dependent items affects the validity of the NDRT, as well as most other standardized reading comprehension tests. One study found that scores on difficult passages were inflated because the questions could be answered without having to comprehend the passages (Entin and Klare, 1980). Remedial students, however, often limited in test-wiseness, sometimes don't even attempt questions following passages they think they don't understand.

Perhaps the most important limitation of standardized tests is that they do not allow the students to display their own comprehending behaviors. Selections of the best alternative from multiple choices discourages students from justifying their answers, posing their own questions, and explaining their interpretation of a passage (Readence and Moore, 1983). Instructors are constantly fighting the passive attitude with which remedial students approach the reading task. Standardized reading tests tend to encourage it.

Diagnostic Tests

Two trends in college/adult reading programs during the last twenty years have had an effect on testing. The first is the shift away from group instruction to individualized learning-center environments. The second is a combination of the need for accountability and budget pressure which have led to an emphasis on collecting data to evaluate effectiveness (Cranney, 1983).

Most reading programs measure and report pre and post-test results as a means of evaluating student progress and program effectiveness. Sometimes the same test is used as a placement tool as well as a pre-test. In addition, the pre-test and/or placement test may also be used as the basis for developing individual instructional programs. In effect, the same test may be used to place a student, measure progress, and diagnose. Instructors and researchers agree that a test should be considered a single measure of a student's behavior under particular circumstances at a particular time, and should only be used in conjunction with other measures. Yet, a single test is often used to perform three functions for which it is probably inappropriate.

Instructors are understandably reluctant to give up instructional time for testing unless they are convinced that the information gained is additional and valuable. Experienced reading teachers are often excellent diagnosticians and, by the end of the semester, are usually very knowledgeable about their students' strengths and weaknesses. An attractive diagnostic test would provide useful information which could be used in developing an educational plan at the beginning of the semester.

Desirable Features in a Diagnostic Test

In developing or selecting a diagnostic test for remedial college students, there are at least ten features to keep in mind.

1. Compatability with the reading program - A diagnostic test is administered to gain information to improve instruction. For the results to be useful, the test should define reading in the same manner as the reading program (Farr, 1969). It should emphasize those areas which will be taught, and tested after instruction has been completed. The goal of college remedial programs is to prepare students to read college-level materials. The reality factor (Schreiner, 1979) should be considered in test selection, or how similar the tasks on the test are to the real reading the student will be asked to do.

2. Appropriateness of the reading selections and tasks - The passages and questions on the test should be interesting to the remedial population and should cover a range of difficulty levels. The format should be appropriately sophisticated for an adult group yet not so difficult as to be discouraging.

3. Motivating to the student - Remedial students are easily discouraged by a test which they consider too difficult, too long, or unfair. Whenever possible, it is also helpful to have a test administered by an encouraging person with whom the students are comfortable, or at least familiar.

4. Generous time allowance or untimed testing situation - Many remedial students work slowly and have been encouraged to check their work carefully. Scores for students who have not been able to complete a test are not often useful.

5. Clear and simple instructions - Students who have a history of poor test performance are often anxious about any testing situation. Further anxiety, produced by complicated directions or methods of recording answers, can affect scores.

6. Straightforward questions - Test-wiseness is not a characteristic typical of remedial students. Tricky questions usually serve to confuse them and reveal little about their reading ability.

7. Opportunity to respond - Reading instructors encourage students to describe, analyze, and respond to passages. A multiple-choice format encourages the student to adopt a passive attitude toward the reading selection. At least the alternative choices should reveal something about the reader's strategy (Johnston, 1983). Ideally, the student would be asked to formulate some of his own responses.

8. Feedback - Both the instructor and the student should be provided with information about specific strengths and weaknesses. Adult learners are often very anxious to know "what their problem is."

9. Reading abilities assessed as they will be used - For example, students are rarely asked to define words in a list unless they are learning specific terminology. Vocabulary knowledge, then, should be measured in a meaningful context. Word attack skills should be tested by application rather than knowledge of rules. An instructor would want to know, for example, whether a student has a basic notion of how to divide an unfamiliar word into syllables when trying to decode it. Comprehension areas, too, should be handled realistically.

10. Option of partial administration - Many diagnostic tests are very comprehensive. In many cases, an instructor will want to test only certain skill areas rather than administer the whole test. It is also desirable to allow students to move on to more difficult items when it becomes apparent that they are being tested below their ability levels.

Using Diagnostic Information

Efficiency of instructional time is essential to a successful remedial reading program. In many cases, instructors and students are attempting to fill in the educational gaps of twelve years in a matter of months. The most promising aspect of accurate diagnostic information is that neither the student's nor the teacher's time is misspent.

If a diagnostic test is well matched with the reading program, the information gained will address the instructional goals. For example, a rudimentary knowledge of word attack skills and the ability to use a dictionary may be considered important. Students who demonstrate proficiency in these areas don't need further instruction. Their individualized learning plan can begin with something else.

On the other hand, the instructor wants to know the weaknesses of the students as well. Although diagnostic information is primarily individual, certain group patterns may emerge which will help an instructor plan lessons for the whole class or sections of it. Students with similar strengths and weaknesses may be grouped together for instruction or practice. Some students may be used to teach others in their areas of competence.

Comprehension skills are difficult to isolate and assess. Often no particular pattern of subskills will emerge for a student. Literal comprehension skills are the easiest to teach and test. Problems on this level can often be attributed to vocabulary deficiencies or passages above the student's reading level. Inferential comprehension skill, though, are the most important area for a remedial student who wishes to be successful in college.

Both the instructor and the student need to know if the type of passage (difficulty, subject) affects the student's inferential comprehension performance. In some cases the student needs help in analyzing the passage, in others the question. Appropriate strategies should be presented to the student followed by practice.

When a student realizes that diagnostic test results are used to find out what he does and doesn't know, and to teach him the skills he needs, his/her attitude toward testing often improves. Remedial students are often intrigued by the diagnostic process and by keeping track of their progress.

Finally, a note of caution about diagnostic reading tests is appropriate. Reading is a process which can not be divided into subskills, the sum of which produces a proficient reader. Reading involves thinking, reasoning, and evaluating text. Students can be tested and taught word attack skills, vocabulary words, given practice in finding the main idea, etc., but if they do not learn to think, they will not be good readers.

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